

2. (Amended) The carbon body according to claim 1, wherein said curved wall approximately surrounds openings in a curved form, as viewed in plan, as peripheral portions of the openings.

3. (Amended) The carbon body according to claim 1, including an object having a surface on which said carbon body is positioned, the back surface of said carbon body contacting the surface of the object, and said curved wall standing up from the surface of the object.

4. (Amended) The carbon body according to claim 1, wherein a base that occupies the back surface within said carbon body is a continuous film embedded in the openings.

5. (Amended) The carbon body according to claim 1, wherein said curved wall has a hexagonal crystal structure with a bottom plane parallel to a direction that crosses the front surface of said carbon body.

6. (Amended) The carbon body according to claim 1, wherein said curved wall has an average thickness of no more than 100 nm.

7. (Amended) The carbon body according to claim 1, wherein an electrical current can flow between any two points on the carbon body.

8. (Amended) The carbon body according to claim 3, wherein the object is a glass substrate.

9. (Amended) A process for producing a carbon body, including generating a plasma in a gas containing a carbon compound and applying a magnetic field and electromagnetic waves to the plasma to form the carbon body on a surface of an object by chemical vapor deposition, wherein the magnetic field and the electromagnetic waves satisfy a resonance condition for electrons in the plasma.

10. (Amended) The process for producing the carbon body according to claim 9, wherein the magnetic field and the electromagnetic waves advance in a direction parallel to the magnetic field, crossing the surface of the object.

11. (Amended) The process for producing the carbon body according to claim 9, wherein the electromagnetic waves are microwaves.

12. (Amended) The process for producing the carbon body according to claim 9, wherein gases for generating the plasma include a carbon-containing compound and hydrogen, and the hydrogen has a concentration range from 25% to 75%.

13. (Amended) The process for producing the carbon body according to claim 9, wherein the object is a glass substrate.

14. (Amended) The process for producing the carbon body according to claim 9, wherein the object is heated at no more than 700°C.

15. (Amended) An electric field emission type electron source, including a carbon body having a front surface with a continuous curved wall having a netlike structure as an electron emitting member for emitting electrons.

16. (Amended) The electric field emission type electron source according to claim 15, wherein the wall surrounds openings and the openings have a diameter larger than height of the wall.

17. (Amended) The electric field emission type electron source according to claim 15, including a cathode electrode for supplying electrons to said carbon body, and an extraction electrode for generating an electric field for inducing emission of the electrons from said carbon body, wherein said carbon body is positioned in front of the cathode electrode, contacting the cathode electrode, and the extraction electrode is

positioned in front of the carbon body so that the extraction electrode does not overlap the carbon body, as viewed in plan.

18. (Amended) The electric field emission type electron source according to claim 15, including a cathode electrode for supplying electrons to said carbon body, and a backside extraction electrode, positioned at a rear side of said carbon body, for generating, from the rear side, an electric field for inducing emission of the electrons from said carbon body, wherein the cathode electrode is positioned in front of the backside extraction electrode, and said carbon body is positioned in front of the cathode electrode, contacting the cathode electrode.

19. (Amended) The electric field emission type electron source according to claim 18, wherein the cathode electrode is located only at a periphery of said carbon body.

20. (Amended) The electric field emission type electron source according to claim 18, wherein the cathode electrode is positioned outside the backside extraction electrode and not overlapping with the backside extraction electrode as viewed in plan.

IN THE ABSTRACT

Replace the abstract with:

ABSTRACT OF THE DISCLOSURE

A carbon body has a structure for producing a planar electron source in a simple manner; a process for producing the carbon body; and an electric field emission electron source using the carbon body. The carbon body is a thin layer having a front surface and a back surface, and at least the front surface is a continuous curved wall, as viewed in plan, having a netlike structure.